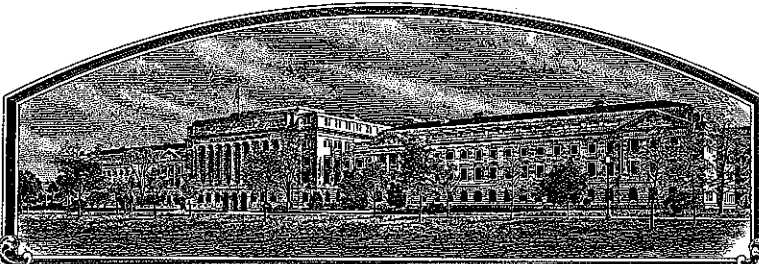


No.

200300271



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Rijk Zwaan Zandteelt en Zandhandel B.V.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

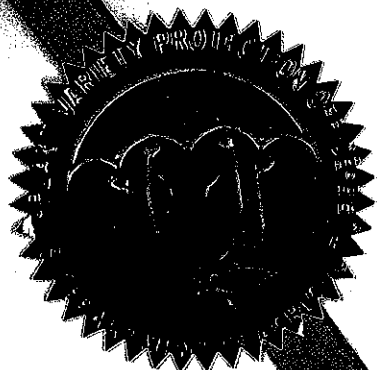
'Optigon'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventh day of August, in the year two thousand and six.

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture

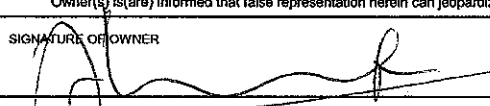


U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>Rijk Zwaan Zaadteelt en Zaadhandel B.V.</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <b>79-30 RZ</b>		3. VARIETY NAME <b>OPTIGON</b>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>Burgemeester Crezeelaan 40 2678 KX DE LIER The Netherlands</b>		5. TELEPHONE (include area code) <b>+31 174 532300</b>		FOR OFFICIAL USE ONLY PVPO NUMBER <b>200300271</b> FILING DATE <b>June 19, 2003</b>	
		6. FAX (include area code) <b>+31 174 513730</b>			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>corporation</b>		8. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>Ltd.</b>		9. DATE OF INCORPORATION <b>08-18-1953</b>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)				FILING AND EXAMINATION FEES: \$ <b>3652.<sup>00</sup></b> DATE <b>6/19/2003</b> CERTIFICATION FEE: \$ <b>768.<sup>00</sup></b> DATE <b>6/19/06</b>	
11. TELEPHONE (include area code)		12. FAX (include area code)		13. E-MAIL <b>a.schenkeveld@rijkwaaan.nl</b>	
14. CROP KIND (Common Name) <b>Lettuce</b>		15. GENUS AND SPECIES NAME OF CROP <b>Lactuca sativa L.</b>		16. FAMILY NAME (Botanical) <b>Compositae</b>	
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)			
19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED			
21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.  The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.  Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER			
NAME (Please print or type) <b>J.W. Koolstra</b>		NAME (Please print or type)			
CAPACITY OR TITLE <b>Research Manager</b>		DATE <b>June 17, 2003</b>		CAPACITY OR TITLE	
				DATE	

## INSTRUCTIONS

**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. **Retain one copy for your files.** All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

## Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

## ITEM

- 18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;  
(2) the details of subsequent stages of selection and multiplication;  
(3) evidence of uniformity and stability; and  
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:  
(1) identify these varieties and state all differences objectively;  
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and  
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

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21. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

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22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

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Optigon has not yet been sold in the United States of America. Optigon was sold for the first time outside of the U.S.A. in January 2002 in France and Italy.

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23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

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EU date of issuance 05-05-2003, title no. EU11107

France, date of file 10-01-2001, file no. 17855

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**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089. <http://www.ams.usda.gov/lsg/seed.htm>

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 3.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

ST-470 (02-10-2003) designed by the Plant Variety Protection Office with Word 2000. Replaces former versions of ST-470, which are obsolete.

## EXHIBIT A. ORIGIN AND BREEDING HISTORY OF THE VARIETY

VARIETY: Lettuce Optigon

### *Genealogy/Details of stages of selection and multiplication:*

The development of Optigon started in 1992 with a cross between a BC2.S3-plant with the variety Sesam (Rijk Zwaan) as recurrent parent and a butterhead x batavia-cross as donor parent, and an F4-plant from a green batavia-cross as father. From this cross an F2-plant was selected in 1993 as a father and crossed with a BC2.S4-plant from the same Sesam-backcross as mentioned above. From this cross an F4-plant was selected in 1995 as a father and crossed with a selected F4-plant from a cross between another BC2.S4-plant from the same Sesam-backcross as mentioned above and a plant of the variety Loretta (Rijk Zwaan) as father. In 1997 a selected F4-plant from this cross was crossed with a plant of the variety Lagon (Rijk Zwaan). From this cross an F2 was obtained and tested in 1998. A combined line and pedigree selection resulted in 2000 in a uniform F6-line based on one F5-plant. All crossing and breeding was performed in the Netherlands and Australia. The line obtained the introduction number 79-30 RZ, which was changed into Optigon during the European registration procedure.

Selection was based on:

#### 1. Field evaluation:

- Homogeneity
- Plant size
- Leaf shape
- Leaf colour
- Shelf life
- Tipburn resistance
- Bolting resistance

#### 2. Laboratory tests on downy mildew resistance, and LMV tolerance

- statement of uniformity and stability

Optigon was stable and uniform in variety tests and in seed multiplications carried out since 2000. Official tests of GEVES (EC variety list and Community Plant Variety Right) confirmed the uniformity and stability of Optigon.

In seed multiplications we are finding less than 0,5% off-types. *Variants*

*RAD*  
*4/27/2006*

You asked for further disclosure of the pedigree of 'Optigon'. The pedigree is graphically presented in a figure (see attachment). As stated in our original exhibit A, an F4-plant from a green batavia-cross was used as a father in one of the early crosses. We were able to trace this batavia-cross back to its original mother, which was the batavia land race 'Dorée de printemps', and a father, which is a batavia breeding line from the company TS-Seeds, indicated by 'LRC'. Unfortunately, it is not possible to trace back the pedigree of this breeding line, because the company TS-Seeds does not exist anymore, and the cross was made more than 15 years ago, and for those two reasons the original breeding information is not available. So we cannot supply you with more information on these two original parents. However, I hope it is clear for you that these breeding lines make up only 1/32 of the total pedigree of 'Optigon' and that its plant habit (batavia) is completely different from 'Optigon', which type is in between oakleaf and lollo rossa.

There is one other breeding line in the pedigree which cannot be traced back to commonly known ancestors, namely line '525543'. This breeding line was obtained from a cross between a butterhead and a batavia breeding line.

Unfortunately, it is not possible to trace back the pedigree of these lines, because the cross was made more than 15 years ago, and for this reason the original breeding information is not available anymore. So we cannot supply you with more information on these two original parents.

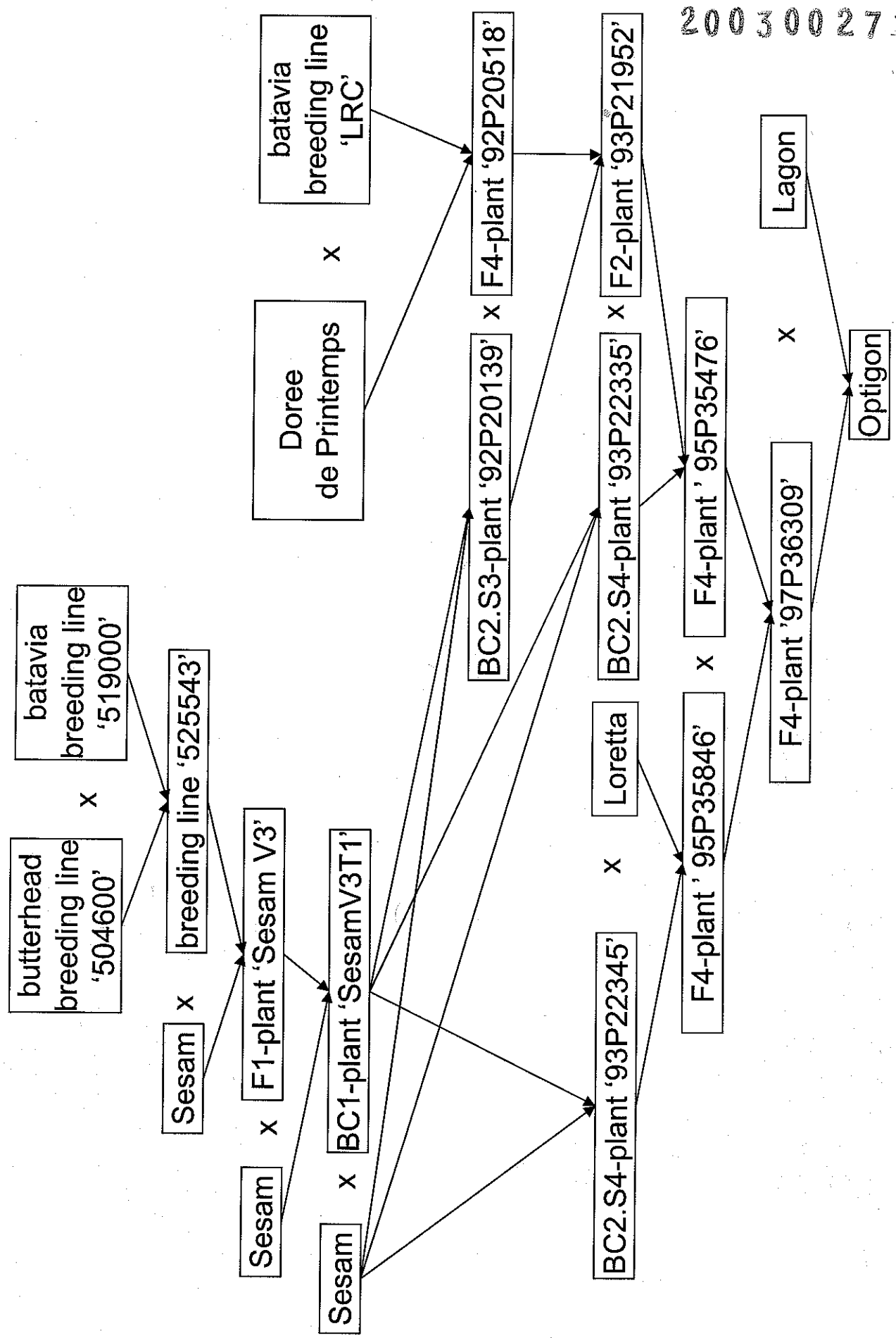
However, I hope it is clear for you that this (butterhead x batavia) breeding line makes up only 5/128 of the total pedigree of 'Optigon' and that its plant habit (in between butterhead and batavia) is completely different from 'Optigon', which type is in between oakleaf and lollo rossa.

(See attached file: Optigon\_pedigree.ppt)

In reply to your remark on the difference between 'variants' and 'off-types', I can confirm that in Exhibit A we meant 'variant' when speaking about 'off-type'. The definitions you mentioned in your letter were not known to us at the time of application, and therefore the word 'off-type' was ill-used by us in the past. We will keep the correct definitions of 'off-type' and 'variant' in mind in new applications.

The 'variants' of 'Optigon' may be identified by their increased vigour, coarser lobing, and less marked leaf undulation.

Selection was performed in Fijnaart, the Netherlands under outdoor conditions for the F2, and F3-generation, and in Aramon, France in plastic tunnel conditions for the F4-generation. The F6-line was produced on an F5-plant in absence of selection in the greenhouse in Fijnaart.



## EXHIBIT B. STATEMENT OF DISTINCTNESS

VARIETY: Lettuce Optigon

*Identify the varieties and state all differences objectively:*

Optigon is a slow bolting cutting lettuce (lollo rossa type) with incised leaves. It is recognisable by its very red, deeply incised leaves. Optigon is resistant to the official Bremia fysis's NL1, NL2, NL4, NL5, NL6, NL7, NL10, NL12, NL13, NL14, NL15, NL16, BI:21, and BI:23.

*Difference from parent varieties:*

Optigon differs from Sesam by its resistance to *Bremia lactucae* NL1, NL2, NL4, NL5, NL6, NL7, NL10, NL12, NL13, NL14, NL15, NL16, BI-21, BI:23 and by its deep leaf incisions.

Optigon differs from Loretta by its deep leaf incisions.

Optigon differs from Lagon by its more intense red colouration and its smaller size.

*Difference from other lettuce varieties from the database:*

Denomination of parent variety	Characteristic in which the similar variety is different	State of expression of similar variety	State of expression of candidate variety
Lagon	anthocyanin concentration	moderate	intense
Lagon	plant size	medium	small

'Optigon' is most similar to 'Lagon'.

'Optigon' does not differ from the most similar variety 'Lagon' when it concerns Bremia resistance. Both varieties carry the Dm18-gene.

In addition to what was indicated before in exhibit B, we would like to mention the following differences between 'Optigon' vs. 'Lagon':

mature leaf anthocyanin distribution:

'Optigon' - throughout vs. 'Lagon' margin only

mature leaf anthocyanin concentration:

'Optigon' - intense vs. 'Lagon' - moderate

Bremia resistance is defined as the capacity of the plant to resist infection by each of the mentioned strains in all stages between seedling stage and harvestable plant stage. It is tested in the laboratory by two interchangeable methods, described by Bonnier et al. (1992). One method comprises an inoculation on 7 day old seedlings, and observation of sporulation 10-14 days later. The other method comprises an inoculation of leaf discs with a diameter of 18 mm and taken from a non-senescent, fully grown, true leaf, and observation of sporulation 10 days later. The strain of Bremia lactucae Regel can be each of the following strains: NL1, NL2, NL4, NL5, NL6, NL7, NL10, NL12, NL13, NL14, NL15, NL16, Bl:21, Bl:23 (Van Ettehoven & Van der Arend, 1999).

- Bonnier FJM, Reinink K, Groenwold R, 1992. New sources of major gene resistance in Lactuca to Bremia lactucae. Euphytica 61:3, 203-211.

- Van Ettehoven K, Van der Arend AJM, 1999. Identification and denomination of 'new' races of Bremia lactucae. In: Lebeda A, Kristkova E (eds.) Eucarpia leafy vegetables '99. Palacky University, Olomouc, Czech Republic, 1999: 171-175.

#### Trial 1

location: Fijnaart, the Netherlands  
sowing: 01-03-2001  
transplanting: 06-04-2001

variety:	Optigon(n=10)	Lagon(n=10)
anthocyanin colouration:	187A	187B
spread of frame leaves (cm):	24.1(sd=1.9)	28.8(sd=3.0)

#### Trial 2

location: Roelofarendsveen, the Netherlands  
sowing: 01-03-2002  
transplanting: 06-04-2002

variety:	Optigon(n=10)	Lagon(n=10)
anthocyanin colouration:	187A	187B
spread of frame leaves (cm):	34.8(sd=2.0)	39.8(sd=1.8)

On both locations Optigon is significantly more red than Lagon (RHS colour chart). An F-test based on analysis of variance across both locations shows that Optigon is significantly different from Lagon for spread of frame leaves ( $F=48.2$ ;  $p<0.001$ ). A T-test based on data of trial 1 shows that Optigon is significantly different from Lagon for spread of frame leaves ( $t=-4.24$ ;  $p<0.001$ ). A T-test based on data of trial 2 shows that Optigon is significantly different from Lagon for spread of frame leaves ( $t=-5.87$ ;  $p<0.001$ ).



U.S. Department of Agriculture  
Agricultural Marketing Service  
Livestock and Seed Division  
OBJECTIVE DESCRIPTION OF VARIETY  
LETTUCE *Lactuca sativa*

EXHIBIT C

NAME OF APPLICANT(S) Rijk Zwaan Zaadteelt en Zaadhandel B.V.		FOR OFFICIAL USE ONLY	
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP-Code) Burgemeester Crezeelaan 40 2678 KX DE LIER The Netherlands		PVPO NUMBER <div style="font-size: 1.5em; font-weight: bold;">200300 271</div>	VARIETY NAME OPTIGON
		EXPERIMENTAL DESIGNATION 79-30 RZ	

Place numbers in the boxes for the characters which best describe this variety. Measured data should be the mean of an appropriate number (at least 10) of well spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is: The Netherlands		Color System Used: RHS	
--	--	---------------------------	--

1. PLANT TYPE: (See list of suggested check varieties page 4.)

01 = Cutting/Leaf 02 = Butterhead 03 = Bibb 04 = Cos or Romaine	05 = Great Lakes Group 06 = Vanguard Group 07 = Imperial Group 08 = Eastern (Ithaca) Group	09 = Stem 10 = Latin 11 = OTHER:
--	---	--

2. SEED: COLOR  
 1 = White (Silver Gray)  
 2 = Black (Gray Brown)  
 3 = Brown (Amber)

LIGHT DORMANCY  
 1 = Light Required  
 2 = Light not required

HEAT DORMANCY  
 1 = Susceptible  
 2 = Not susceptible

0

1

1

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions

2

SHAPE OF COTYLEDONS: 1 = Broad    2 = Intermediate    3 = Spatulate

6

SHAPE OF FOURTH LEAF:

1

6

LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

1

APICAL MARGIN: 1 = Entire    4 = Moderately Dense    7 = Lobed  
 2 = Creanate/Gnawed    5 = Coarsely Dentate    8 = OTHER (specify)

3

BASAL MARGIN: 3 = Finely Dentate    6 = Incised

3

UNDULATION: 1 = Flat    2 = Slight    3 = Medium    4 = Marked

0

GREEN COLOR: 1 = Yellow Green    3 = Medium Green    5 = Blue Green    7 = Gray Green  
 2 = Light Green    4 = Dark Green    6 = Silver Green

ANTHOCYANIN:

4

DISTRIBUTION: 1 = Absent    3 = Spotted    5 = OTHER (specify)  
 2 = Margin Only    4 = Throughout

3

CONCENTRATION: 1 = Light    2 = Moderate    3 = Intense

1

ROLLING: 1 = Absent    2 = Present

1

CUPPING: 1 = Uncupped    2 = Slight    3 = Markedly

2

REFLEXING: 1 = None    2 = Apical margin    3 = Lateral Margin

4. MATURE LEAVES (observe harvest-mature outer leaves):

NOTE: Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics

200300271

1	INCISION DEPTH: (deepest penetration of the margin)	1 = Absent/Shallow (Dark Green Boston)	2 = Moderate (Vanguard)	3 = Deep (Great Lakes 659)
2	INDENTATION: (finest divisions of the margin)	1 = Entire (Dark Green Boston)	3 = Deeply Dentate (Great Lakes 659)	5 = OTHER (specify)
3	UNDULATION OF THE APICAL MARGIN:	1 = Absent/Slight (Dark Green Boston)	2 = Moderate (Vanguard)	3 = Strong (Great Lakes 659)
6	GREEN COLOR:	1 = Very Light Green (Bibb) 2 = Light Green (Minetto)	3 = Medium Green (Great Lakes) 4 = Dark Green (Vanguard)	5 = Very Dark Green 6 = OTHER DARK REI
4	ANTHOCYANIN (grown at or below 10 °C): DISTRIBUTION:	1 = Absent 2 = Margin Only (Big Boston)	3 = Spotted (Calif. Cream Butter) 4 = Throughout (Prize Head)	5 = OTHER (specify)
3	CONCENTRATION:	1 = Light (Iceberg)	2 = Moderate (Prize Head)	3 = Intense (Ruby)
2	SIZE:	1 = Small	2 = Medium	3 = Large
2	GLOSSINESS:	1 = Dull (Vanguard)	2 = Moderate (Salinas)	3 = Glossy (Great Lakes)
2	BLISTERING:	1 = Absent/Slight (Salinas)	2 = Moderate (Vanguard)	3 = Strong (Prize Head)
1	LEAF THICKNESS:	1 = Thin	2 = Intermediate	3 = Thick
1	TRICHOMES:	1 = Absent (smooth)	2 = Present (spiny)	

5. PLANT (at market stage. Choose a comparison variety appropriate for this type):

3	5	SPREAD OF FRAME LEAVES: cm. This Variety	4	0	cm. Lagon (specify comparison variety)
		HEAD DIAMETER (market trimmed with single cap leaf): cm. This variety			cm. (specify comparison variety)
5		HEAD SHAPE:	1 = Flattened 2 = Slightly Flattened	3 = Spherical 4 = Elongate	5 = Non-heading 6 = OTHER
		HEAD SIZE CLASS:	1 = Small	2 = Medium	3 = Large
		HEAD COUNT PER CARTON			
		HEAD WEIGHT: g This Variety			g. (specify comparison variety)
		HEAD FIRMNESS	1 = Loose 2 = Moderate	3 = Firm 4 = Very Firm	

6. BUTT (bottom of market-trimmed head):

	SHAPE:	1 = Slightly Concave	2 = Flat	3 = Rounded
	MIDRIB:	1 = Flattened (Salinas)	2 = Moderately Raised	3 = Prominently Raised (Great Lakes 659)

7. CORE (stem of market-trimmed head):

2	7	mm Diameter at base of Head
		Ratio of head diameter/core diameter
5	1	Core height from base of head to apex: mm. This Variety
		3 0 mm. Lagon (specify comparison variety)

8. BOLTING (Give First Water Date) 1 March 2002: Note: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

1	2	6	Number of days from First Water Date to seed stalk emergence (summer conditions): This Variety				(specify comparison variety)
		1	BOLTING CLASS:	1 = Very Slow 2 = Slow	3 = Medium 4 = Rapid	5 = Very Rapid	
1	2	0	Height of mature seed stalk: cm. This Variety		9	0	cm. Lagon (specify comparison variety)

2 5

Spread of Bolter Plant (at widest point):  
cm. This Variety

1 5

cm. Lagon

(specify comparison variety)

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2	BOLTER LEAVES:	1 = Straight	2 = Curved
2	MARGIN:	1 = Entire	2 = Dentate
4	COLOR:	1 = Light Green 4 = Dark Red	2 = Medium Green 3 = Dark Green
BOLTER HABIT:			
1	TERMINAL INFLORESCENCE:	1 = Absent	2 = Present
1	LATERAL SHOOTS (above head)	1 = Absent	2 = Present
1	BASAL SIDE SHOOTS	1 = Absent	2 = Present

9. MATURITY (earliness of harvest-mature head formation)

NOTE: Complete this section for at least one season.

SEASON	Applic. 1/# of days			Check 1/# of days			CHECK VARIETY 2/
Spring		9	5		9	5	Lagon
Summer							
Fall							
Winter							

Give planting date(s), and location(s):

Spring 1 March 2002, Roelofarendsveen, the Netherlands

Summer

Fall

Winter

1/ First water date to harvest.

2/ Fill in check variety name on the appropriate line.

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTATION (tested and proven adapted):

(0 = Not tested

1 = Not Adapted

2 = Adapted)

0	Southwest (Calif., Ariz. desert)	0	West Coast	0	Northeast
0	Northcentral	0	Southeast	2	OTHER Europe
SEASON:					
2	Spring (area Northwest + South Europe )	2	Fall (area NW-Europe )		
2	Summer (area Northwest + South Europe)	2	Winter (area Southern Europe )		
2	GREENHOUSE:	0 = Not tested	1 = Not Adapted	2 = Adapted	
3	SOIL TYPE:	1 = Mineral	2 = Organic	3 = Both	

VIRUS

0	Big Vein
1	Lettuce Mosaic
0	Cucumber Mosaic
0	Broad Bean Wilt
0	Turnip Mosaic
0	Beet Western Yellows
0	Lett. Infectious Yellows
	Other Virus _____

FUNGAL/BACTERIAL

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0	Corky Root Rot (Pythium Root Rot)
4	Downy Mildew (Races <u>NL 1-16, BI:21, BI:23, Cal, Call, CalV, CAV</u> )
0	Powdery Mildew
0	Sclerotinia Rot
0	Bacterial Soft Rot (Pseudomonas spp.&others)
0	Botrytis (Gray Mold)
	OTHER _____

INSECTS

0	Cabbage Loopers
0	Root Aphids
0	Green Peach Aphid
	Other Insect _____

PHYSIOLOGICAL/STRESS

2	Tip Burn
0	Heat
0	Drought
0	Cold

0	Salt
0	Brown Rib (Rib Discoloration, Rib Blight)
	OTHER _____

POST HARVEST

0	Pink Rib
0	Russet Spotting
0	Rusty Brown Discoloration

0	Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)
0	Brown Stain

## 12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

## 13. COMMENTS:

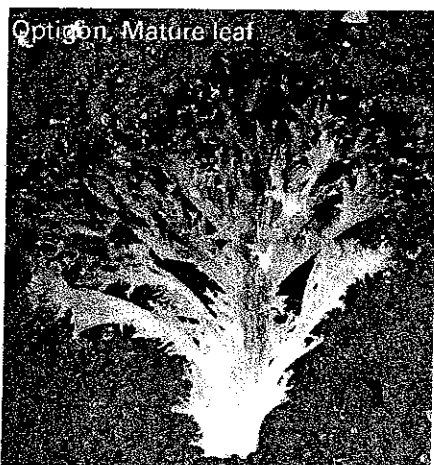
SUGGESTED CHECK VARIETIES

- |     | <u>TYPE</u>       |
|-----|-------------------|
| 1)  | CUTTING/LEAF      |
| 2)  | BUTTERHEAD        |
| 3)  | BIBB              |
| 4)  | COS, OR ROMAINE   |
| 5)  | GREAT LAKES GROUP |
| 6)  | VANGUARD GROUP    |
| 7)  | IMPERIAL GROUP    |
| 8)  | EASTERN GROUP     |
| 9)  | STEM              |
| 10) | LATIN             |

<u>CHECK VARIETY</u>
SALAD BOWL
DARK GREEN BOSTON
BIBB
PARRIS ISLAND
GREAT LAKES 659-700
VANGUARD
VIVA
ITHACA
CELTUCE
MATCHLESS



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RIJK ZWAAN

## EXHIBIT D. ADDITIONAL DESCRIPTION OF THE VARIETY

VARIETY: Lettuce Optigon

Optigon is a slow bolting cutting lettuce (lollo rossa type). It is recognisable by its very red, deeply incised leaves, which makes it very useful for the processing industry. Optigon is resistant to the official Bremia fysis's NL1, NL2, NL4, NL5, NL6, NL7, NL10, NL12, NL13, NL14, NL15, NL16, BI:21 and BI:23 and the Californian pathotypes Ca-I, Ca-IIA, Ca-IIB, Ca-IV, Ca-V

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

## EXHIBIT E

## STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) Rijk Zwaan Zaadteelt en Zaadhandel B.V.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER 79-30 RZ	3. VARIETY NAME OPTIGON
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) Burgemeester Crezeelaan 40 NL-2678 KX DE LIER The Netherlands	5. TELEPHONE (include area code) +31 174 532300	6. FAX (include area code) +31-174 517370
7. PVPO NUMBER		200300 271

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. National or a U.S. based company? If no, give name of country

☐ YES ☒ NO

The Netherlands

10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (If needed, use the reverse for extra space):

## PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 6 minutes per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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